HOUGHTON ROAD

ROADWAY ALIGNMENT

WARD IV CDRC PRESENTATION
OCTOBER 24, 2007

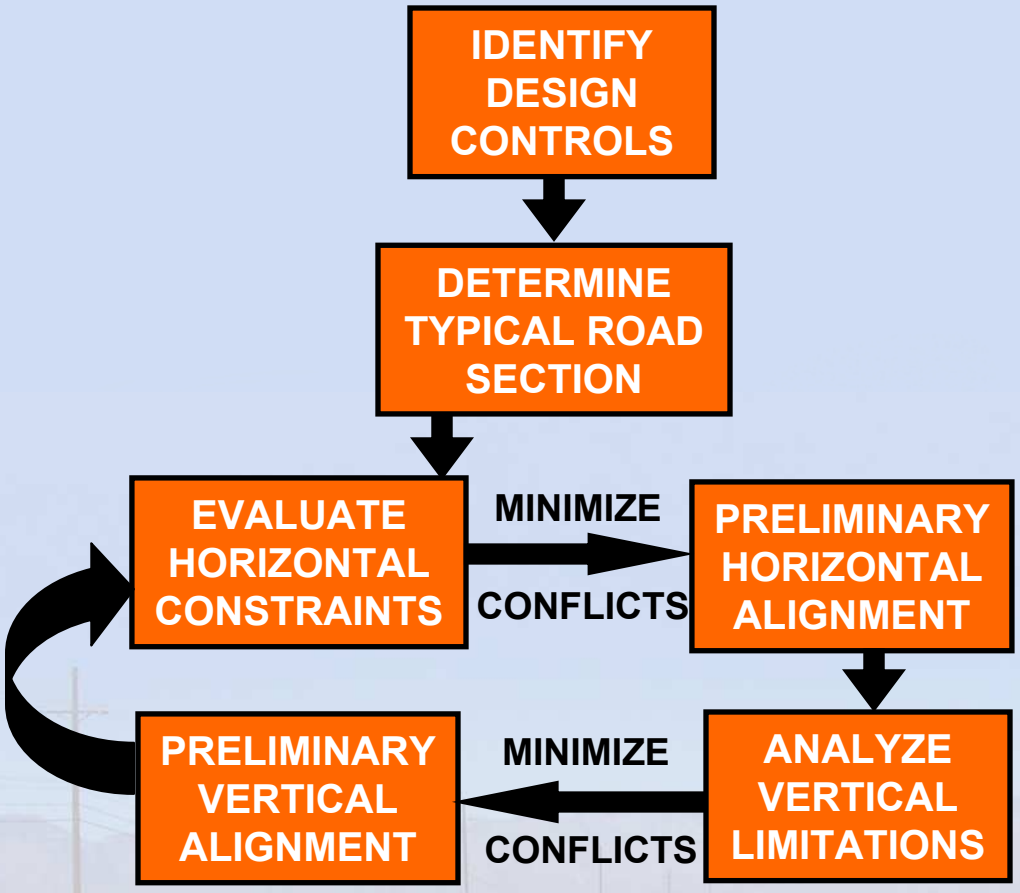
CITY OF TUCSON

Regional Transportation Authority

OUTLINE

1. Alignment evaluation process
2. Valencia Rd to I-10 Considerations
3. Questions
4. 22nd St to Valencia Rd considerations
5. Questions

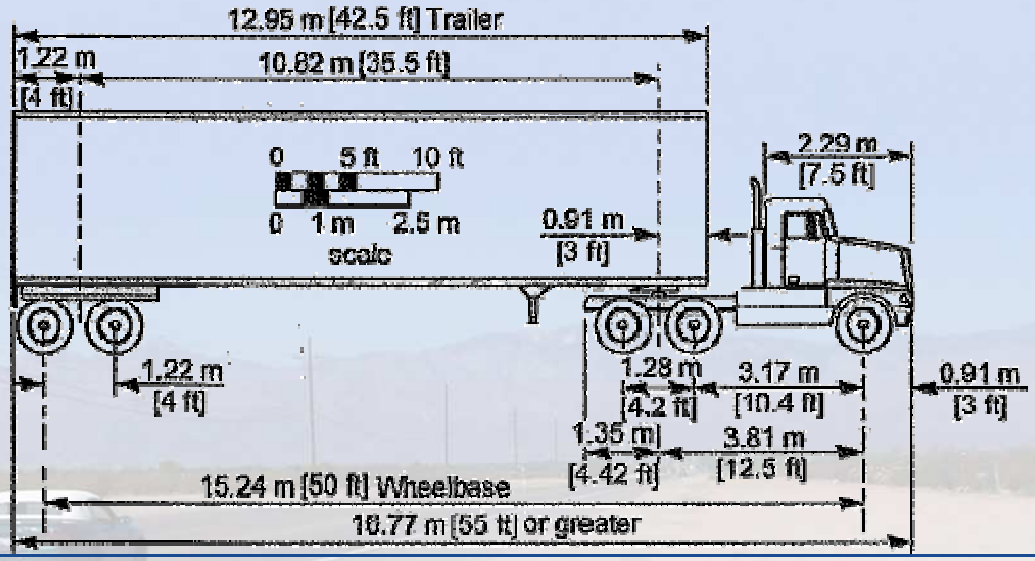
ALIGNMENT EVALUATION PROCESS



DESIGN CONTROLS

Initial considerations

- Design speed for the roadway
  - Houghton: 50-55 mph
- Design vehicle - largest vehicle likely to use the road with relative frequency
  - Houghton: WB-50

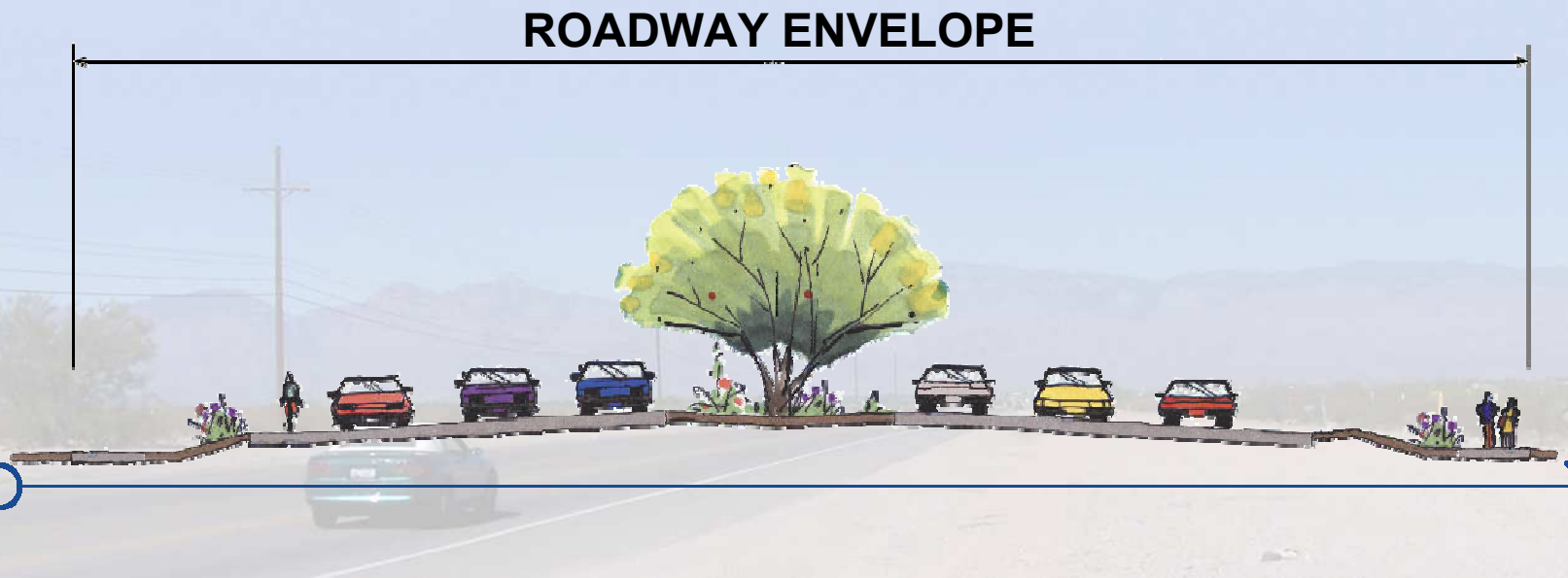


TYPICAL SECTION

Evaluate

1. Number of lanes, median
2. Bike and pedestrian facilities

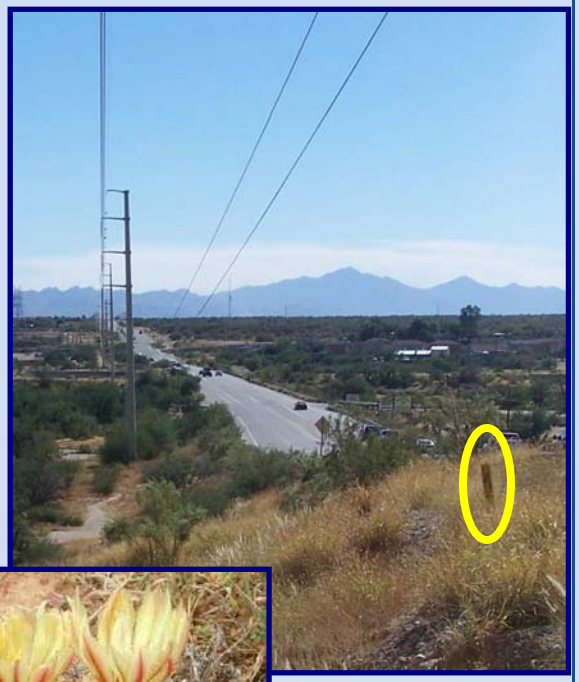
Roadway envelope - total width of the functional elements of the road



HORIZONTAL ALIGNMENT

Elements to consider

- Right-of-way (R/W)
  - Width of R/W owned by agency
  - Evaluate continuity
  - Determine if typical section fits
  - Setbacks/proximity of developed areas or areas in development
- Utilities
  - Location
  - Ability to relocate
- Environmental Resources
  - Sensitive species
  - Archeological



HORIZONTAL ALIGNMENT (CONT)

- Intersections
  - Additional room is needed for turn lanes, signals
- Drainage
  - Minimize impact to washes (404 permit)
  - Attempt to avoid longitudinal drainage
- Topography
  - Identify relatively flat areas (especially new roadways)

VERTICAL ALIGNMENT

- Earthwork
  - Try to balance fill (borrow material) with cuts (excess material)

- Grades / Visibility
  - Road must have a minimum grade (0.5%) to drain
  - Grade should not exceed 7% for operations
  - Provide sufficient visibility at vertical curves

VERTICAL ALIGNMENT (CONT)

- Drainage
  - Provide cover for cross-drainage structures
- Utilities
  - Maintain minimum cover of water, sewer
- Side slopes
  - Provide recovery area
  - Try to match existing grade within R/W to avoid impacts
- Grade separations
  - Provide sufficient clearance

I-10 – VALENCIA RD

Horizontal Constraints

- Right of Way
  - Alignment centered on Existing Roadway Right of Way
  - Maintain locations of existing signalized intersections
  - Maintain Access at I-10

- Existing Development
  - Minimize impacts to Existing Development
    - Commercial & Residential
    - Valencia Road
    - Rita Road
  - Coordinate with Planned Development
    - Old Vail Road

I-10 – VALENCIA RD

Horizontal Constraints

- Utilities
  - Minimize conflicts with Existing Utilities
  - Coordinate Mitigation through design
- Construct new Bridge to east of Existing Bridge

I-10 – VALENCIA RD

Horizontal Constraints

- Drainage
  - Maintain Drainage Channels & Patterns

I-10 – VALENCIA RD

Vertical Constraints

- Drainage
  - Maintain Existing Drainage Patterns
  - Improve Drainage Crossings
  - Eliminate Overtopping at Drainage Crossings
  - Replace Slab Bridge south of UPRR

I-10 – VALENCIA RD

Vertical Constraints

- Drainage
  - Maintain Grades at Valencia & Rita Roads
  - Raise Grade at Old Vail Road/ Mary Ann Cleveland Way Intersection
    - Improve culvert and Channel Hydraulics

- Eliminate Overtopping at Intersection
- Improve Sight Distance south of Intersection

I-10 – VALENCIA RD

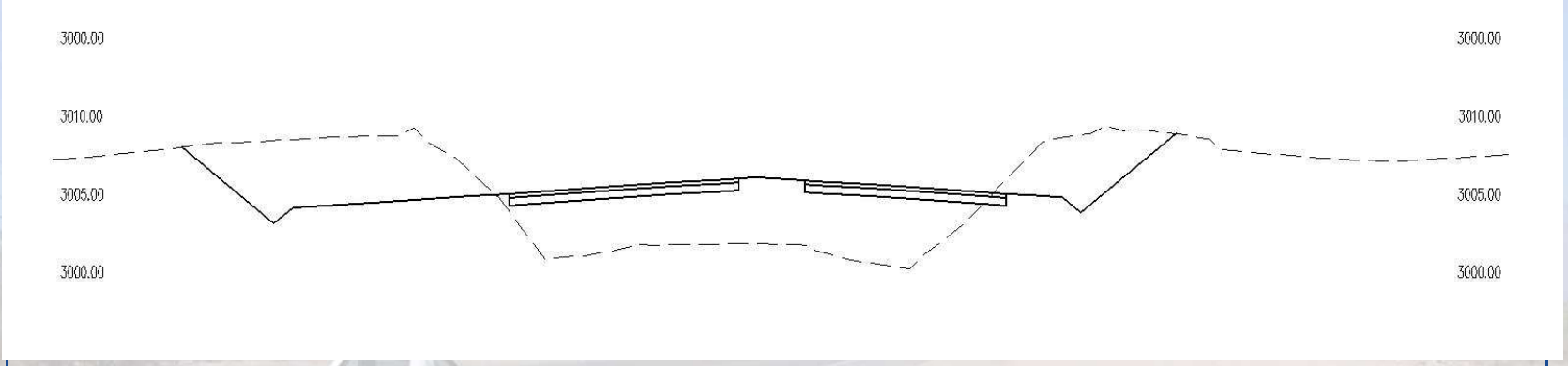
Vertical Constraints

- Sight Distance
  - Improve Sight Distance at UPRR Bridge
  - Provide safe clearance over RR Tracks

I-10 – VALENCIA RD

Vertical Constraints

- Right of Way Impacts and Sideslopes
  - Adjust Grades to Minimize impacts to adjacent properties
  - Identify project breaks for implementation plan

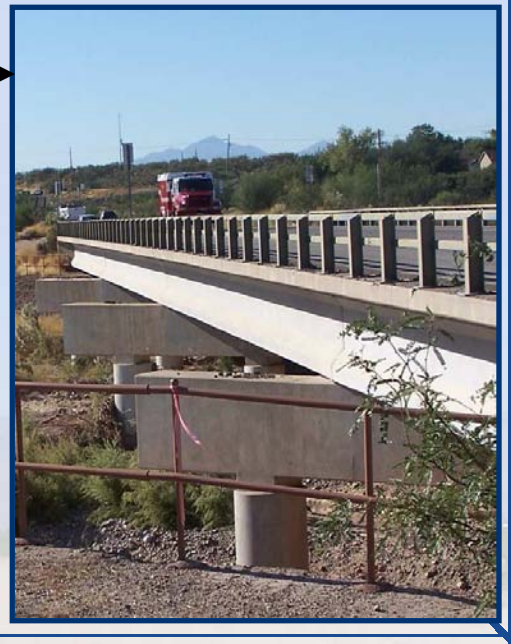


22ND STREET TO VALENCIA ROAD

Horizontal Constraints

- Preserve WAPA electric lines in place

- Area north of Escalante built up on both sides, 150'R/W
- Use existing Pantano wash bridge



- Existing drainage channel along Civano
- Preserve path along Mesquite Ranch, Sierra Morado

22ND STREET TO VALENCIA ROAD

Vertical Constraints

- Match elevation at existing intersections
- Provide adequate visibility south of Escalante
- Minimize cuts/fill needed north of Pantano wash
- Provide recovery area while minimizing retaining walls
- New drainage structures will be significantly larger than existing ones